Daffodil International University

Internship Report

On

GARMENTS MANUFACTURING SYSTEM

Submitted by

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Supervised By

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Dhaka, Bangladesh.

Date of Submission: 24 July, 2020

LETTER OF TRANSMITTAL

Date: 24 July, 2020

To

Asit Ghosh

Assistant Professor

Department of Business Administration,

Daffodil International University

Subject: Submission of Internship Report.

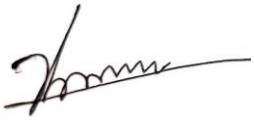
Dear Sir

I am delighted to declare that I have completed my Internship Program in the "Bitopi Group" on **"Study of Garments Manufacturing system in Bangladesh".** For your kind evaluation. To prepare this report, I have given my best determinations that would enrich the project report.

This report endeavors to describe my observations, learning during the study this course. I complete sincere efforts to continue the survey related materials, operational systems, documents and examine relevant records for preparation of the Internship paper as comprehensive and informative as possible within the time allowed for me. Due to various reasons, there may be some errors for which I beg your apology.

I would be pleased if you accept the term paper.

Yours faithfully,



Asaduzzaman Mishuk
ID: 181-12-658
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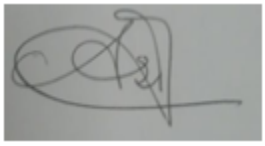
LETTER OF APPROVAL

This internship report prepared by **Asdauzzaman Mishuk**, bearing **ID: 181-12-658** is approved for partial Fulfillment of the requirement for the Degree of MASTERS IN BUSINESS ADMINISTRATION. The student has completed his three months' internship program in on "Study of Garments Manufacturing System in Bangladesh" under my supervision. During the internship period, I found him Sincere, hardworking and enthusiastic.



Asit Ghosh
……..
ASSISTANT PROFESSOR
DAFFODIL INTERNATIONAL UNIVERSITY

Acknowledgement

By the grace of almighty ALLAH, we have completed **INDUSTRIAL ATTACHMENT REPORT** successfully.

My special thanks to my supervisor **Asit Ghose** Lecturer, Dept. of Textile Engineering, Daffodil International University, who motivated, encouraged and helped us in preparing this report.

I like to convey my thanks **to GM Operation Mahabub Alam Khan Shipon** of Remi Holdings Limited for the cordial and friendly support during the initial work.

My cordial thanks to **IE** coordinator, AGM Monjurul Haque of Remi Holding Limited they helped me understanding the practical processes.

While preparing the report I have taken help from various references. So my cordial thanks to them. Finally, I hope that the report will help in understanding the garments, production, quality, in apparel industry in a clear and concise way.
In this report, I have tried to give some information about and I have observed that Remi Holding Limited produce high quality garments and fulfill the special requirements from the different types of buyers by following different internationally recommended standard method.

PREFACE

The Internship report is made on the topic of "Garments Manufacturing System in Bangladesh" in Bitopi Group.

Food, clothing, shelter, medicine and education are the most important basic needs for a human-being to live a worthwhile meaningful and comfortable life. In a modern and civilized society of today, clothing plays a very important role in the decent living at human-being. Two things which distinguish man from the rest of the animal kingdom - one is the power to think and the other is clothing. In other words, man is regarded as a rational human - being. In the developed world, the pattern of consumption of textile is mainly in the form of readymade garments rather than in piece - length. Time is changing fast and accordingly style of consumption of textile undergoes basic change. As a result, the readymade garments business has prospered by leaps and bounds in Western countries such as the U. K., U. S. A., etc. In Eastern countries like Hong Kong, Singapore, Taiwan, Korea, it is equally growing fast. Because these countries are economically highly prosperous as compared with the other countries especially in Asia. In such affluent countries, the tendency of a man to enjoy the life more lavishly naturally grows and change of style of using variety of clothes takes place as it is rightly said that change is the law of nature. Garments has been playing a pivotal role in Bangladesh economy.

ABSTRACT

The garment production systems are a combination of production processes, materials handling, personnel and equipment that direct workflow and produce finished garments. It is a system that depicts how the two-dimensional fabric is transformed into a three-dimensional garment in a manufacturing system. The names of the production systems are based on the various factors like utilization of a number of machines to assemble a garment, layout of machines, total number of operators involved to produce a garment and number of pieces moving in a production line during the production of a garment.

Each garment production system needs a suitable management philosophy, materials handling procedures, plant layout for garments spreading and worker training. The garment industry could combine various production systems to achieve their specific garments' production needs like utilizing only one production system or a combination of different systems for one product style. Designing production system ensures the coordination of various production activities. There is no particular production system that is universally accepted, yet there are different types of production systems followed by different organizations as discussed in the following section.

CONTENTS

OBJECTIVE OF INDUSTRIAL ATTACHMENT

MBA in Textile & Apparel Management & Merchandising is the combination of theoretical knowledge along with the practical experience. This is why the Industrial Training has been included in our academic curriculum.

The main objective of this training is to comprehend our theoretical knowledge along with the practical knowledge. It also enables us to orient ourselves with the practical environment that we will work in future. We systematically learned about various steps of garment manufacturing. Moreover, we knew about the worker management technique. We also learned about merchandising and buyer co-ordination.

CHAPTER 01

1.1 Introduction

The term is "textile" derived from the Latin textiles and the French texere. meaning "to weave," and it originally referred only to woven fabrics. It has. however, come to include fabrics produced by other methods Thus, threads, cords, ropes, braids, lace, embroidery, nets, and fabrics made by weaving. knitting, bonding, felting, or tufting are textiles. Some definitions of the term textile would also include those products obtained by the papermaking principle that have many of the properties associated with conventional fabrics.! in addition to clothing and home furnishings, textiles; re used for such industrial products as filters to air conditioners, life rafts, conveyor belts, tents. its, automobile tires, swimming pools, safety helmets and mine ventilators.

From fabric to garment. 'I he Bitopi group, is truly integrated undertaking. The Bitopi Group, has the capability to offer a complete product range for the export garment markets. The goal of the Bitopi Group, is to become the preferred partner for sourcing high quality garment from Bangladesh with highh advanced technology and an emphasis on developing local human resources. The Bitopi Group, has the potential to make an important contribution to the nation's growing readymade garments export sector.

1.2 Factory Profile

Factory Location

Country: Bangladesh

Zone Profile: The factory is located in Adamjee EPZ - one of the Export Processing zones of Bangladesh. In a nutshell the following is the zone profile:

LEED is developed by the U.S. Green Building Council (USGBC). Leadership in Energy and Environmental Design (LEED) is a set of rating systems for the design, construction, operation, and maintenance of green buildings.

Our Score is 97/110. Now remi holding is now world number #1 green factory.

Factory Building & Total Area:

Remi Holdings Ltd. situated in a 2 storied Steel pre-fabricated building with a total area of 2, 84,191.25 SFT. In addition to this a separate Utility Building of 3586.835 SFT is newly constructed adjacent to main building.

Total Land Area	
Building Area	**2,84,191.25 SQFT**
Total Number of Buildings/Shade	2
Number of Floors	4
Total ground floor area	**85303.68 SQFT**
Total ground floor mezzanine area	627103.06 SQFT

Total 2nd floor area	84644.51 SQFT
Total 2nd floor mezzanine area	22835.71 SQFT
Total ground floor area (Utility Building)	7830 SQFT
Total ground floor mezzanine area (Utility Building)	3586.835 SQFT
Total 2nd floor area (Utility Building)	7830 SQFT
RMS	142.15 SQFT
Gard room	188.64 SQFT
Fire control room	188.68 SQFT
Utility basement	1980 SQFT
Fire pump room	124.09 SQFT
Training room (old)	3237.10 SQFT
Utility office & store	3586.835 SQFT
Driver room	150 SQFT
Car Shade	651 SQFT

BUILDING LAYOUT:

Main Building # 1:

Ground floor:

East Side: Store & Commercial Office, Fabric & Trims Inspection Room, Fabric & Accessories ware House, Loading Unloading Area, Left over (Fabric & Accessories), Reception, Child Care, Medical Center, Training room (old)

West Side: Tearing room, Grinding, P.P. spray, Hand scarring, Chemical store, R & D, washing plant, Washing maintenance room, Lab, Washing & Finishing office room, Rejection room, CTPAT, Metal detection space, Spot removing room, Pull test, Finishing sub store, Finishing line.

Ground floor mezzanine:

East Side: Quality department, Inspection room, Panty, Finished goods area, Canteen.

West Side: Prayer room, ILO Training Center.

1st floor:

East Side: CAD & Sample room, Cutting section, Maintenance office.

West Side: Sewing Section.

1st floor mezzanine:

IT room, Accounts & Commercial office, Office area, Conference room, Sewing machine store.

Under ground: Fire pump room

Utility Building # 2:

Ground floor: Generator & Sub-Station, Transformer, ETP.

Ground floor mezzanine: ETP & WTP.

1st floor: Compressor, Boiler, ETP reactor lab.

1st floor mezzanine: Utility office, Store.

1.3 Social Policy

The Bitopi Group, is committed to the best human workplace practices. Their goal is to continuously improve their Human resource policies and procedures through education, training, communication and employee's involvement.
To that end Bitopi Group, has identified eight (8) areas of importance. The company commits to management review, employee's open communication, policy development and coordination with the SA 8000 standard to comply with all state/local laws and industrial/factory laws of people's republic of Bangladesh to provide a favorable employment environment that respects understand the needs of its employees.
The company commits to inform all employees of its policy and position on the SA 8000 standard. All employees will be made aware of the policy and company statement upon implementation. Going forward all new employees will be trained on SA 8000 in new employees' orientation. Periodically throughout the year the company will reaffirm its commitment to the SA 8000 policy through employee communications such as office notice, demonstration and payroll stutters.

The eight (8) identified areas are:

- Child labor
- Forced labor
- Health & Safety
- Freedom of assembly/ Right to collectively bargain
- Discrimination
- Disciplinary practices
- Working hours
- Remuneration / Compensation

1.4 Quality Objectives

Right Quality First Time Always, Every Time"

We, Remi Holdings Limited are committed for on time delivery of consistent Quality Products to enhance our customer satisfaction.

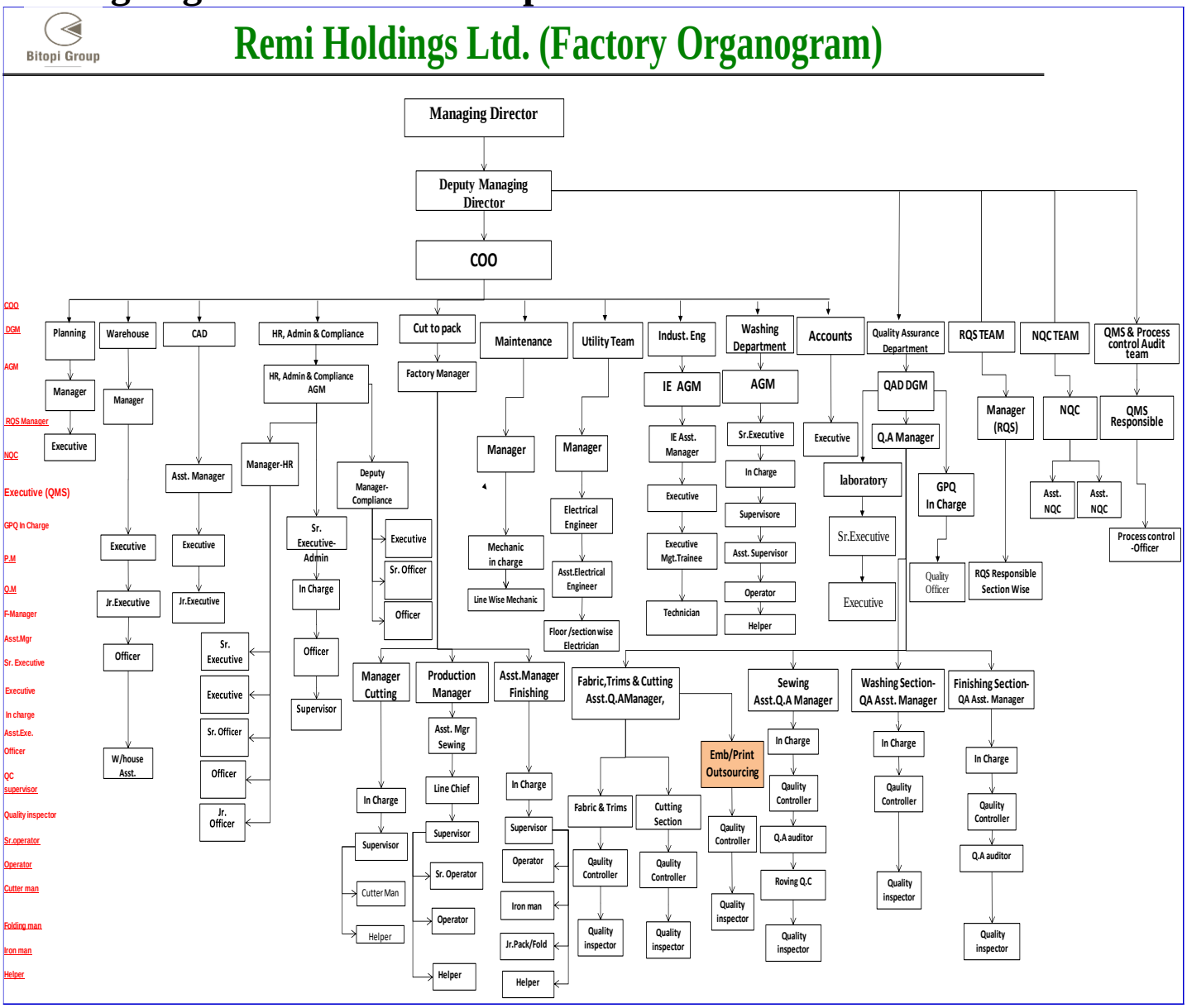
We will attain cost effectiveness by improving Product Quality, productivity and Product realization by adopting new methods and technology.

We will continually improve the effectiveness of the Quality Management System by reviewing the Quality Objectives, Quality Policy and Quality Performances at Regular Intervals.

To accomplish this, we will provide adequate resources, Continuous Training and will follow Standard Operating Procedures and Work Instructions."

1. 100% Follow - up customer feedback promptly.
2. Alteration DHU below 5%
3. Alteration Finishing Return below 2%
4. Individual operator DHU 0%
5. Minimizing the downtime for every machine.
6. To increase 5% export every year.
7. To decrease 8% customer complain every year.
8. To minimize 5% rejection of products every year.
9. Ensure timely shipment.

1.5 Organ gram of different departments



CHAPTER 02

2.1 What is garment:

First Garment is a cloth to cover the shy of human being. Second garment is cloth to present his/her environment as a human being to cover the shy. We can say garment is cloth to protect cold or warm environment of human body by cover of cloth. Garment may be different types. We will discuss in before.

2.2 Sequence of garment manufacturing processes

Sketch/design
↓
Basic block
↓
Working pattern
↓
Sample making
↓
Basic manufacturing difference
↓
Approved sample
↓
Costing
↓
Production pattern
↓
Grading
↓
Marker making
↓
Fabric spreading
↓
Cutting
↓
Numbering
↓
Sewing
↓
Ironing
↓
Finishing
↓
Final inspection
↓
Packing
↓
Cartooning
↓
Shipment

Printing or Embroidery

Washing or Dyeing

2.3 Store

It has big store room, contains difference types materials electrical and machinery accessories. Mainly it two sections such types of section are

1. Technical store: It contains various types electrical, machinery & materials which supply in many section of garments, such as

i. Various types of sewing m/c and their parts such as
   a. Guide
   b. Zipper guide
   c. Feed dog
   d. Folder
   e. Guard
   f. lopper
   g. Attachment sate h. Bobbin
   i. Bobbin case
   j. Bobbin winter
   k. Shuttle
   l. Shuttle carrier
   m. Belt
   n. Machine pulley
   o. Clamp
   p. Hand glove
   q. Knife
   r. Blade
   s. Roller cover
   t. Needle
   u. Pressure feed
   v. Paty
   w. Rotary hook
   x. Finger
   y. Screw
   z. Spring
   ii. Thread sucker m/c
   iii. Electrical instruments
   iv. Various types of iron m/c
   v. Boiler
   vi. Gas cylinder

2. General store types material contain such as:

- Various types of record file
- Khata
- Pen
- Pencil
- Rubber
- Seffner
- Tape
- adhesive
- Scale
- Compass
- Eraser
- pattern paper
- Marker

2.4 Different Sections of the garment Industry

1.Sample Section: It is the first section of garment manufacturing process.
This section makes all types of initial sample.

2.Cutting Section: It is the second section of apparel manufacturing.

3. Sewing Section: Garment's cut parts are assembled here & then send the wash or finishing. Sewing section also called hart of garments.

4. Washing Section: Remove all dust and natural impurities.

5. Finishing Section: It is the last step of garment making. All of the finishing processes are done here. Let yourself know what kinds of work are to be carried out in this segment-

a) Pressing/ Ironing
b) Packing
c) ship

CHAPTER 03

3.1 Fabrics Store

From the Dyeing section we have founded deferent types of Fabrics. There are many name of fabric i.e. is bellow

1. 1/1 rib fabric
2. 2/2 lycra rib
3. Fleece fabric with brush
4. PK fabric
5. 1/1 lycra rib
6. Single jersey
7. Double jersey
8. Denim Fabric
9. Twill Fabric

When fabric comes in the store from the dyeing section or other importer country then fabric goes to fabric inspection section.

3.2 Quality Assurance

Bitopi Group, has a quality policy for quality assurance. The quality policy of Dowel grope, is to manufacture and export different kinds of high quality readymade garments to its customers. The objective of Dowel grope, is to attain & enhance customer satisfaction by providing competitive price, on time delivery of contracted quality and quantity of readymade garments with reliability and also to increase efficiency of work force.

To attain these objectives, the management of Bitopi Group, has decided to adapt the following:

- To create awareness regarding customer's requirements throughout the organization.
- By providing training to develop efficiency/awareness of the employees.
- To collect customer feedback regularly to know about their conception about the company and to take appropriate action timely.
- To reduce the percentage of rejection/wastage to maximum 2% per annum.

All employees of Bitopi Group. Is being advised to follow the documented procedures of their respective department/section and work hard to attain these quality objectives. The management is committed to provide adequate resources, competent manpower, suitable premises, required machinery/equipment and facilities to implement the quality policy & objectives of the company.

3.3 Inspection

The inspection is done to control the quality is means by examining the products without any instrument. To examine the fabric, sewing, button, thread, zipper, garments measurement and so on according to specification or desired standard is called inspection. There are so many facilities for inspection in every section of garments industries. The aim of inspections is to reduce the time and cost by identifying the faults or defects in every step of garments making.

To do success in inspection, the process can be run by maintaining following "inspection loop":

- Inspection
- Identify the defects or faults.
- Knock the appropriate person.
- Identify the reasons of defects or faults.
- Remove the defects or faults.

4-point System

In this method defect points are found out in 100 sq. yds. Of fabrics by inspection. The fabric must be rejected if the defected points are >40.

Defects length for warp way and weft way	points
Up to 3"	1
More than 3"-6"	2
More than 6"-9"	3
Above 9"	4
Defects area for holes and openings	points
l"or <l"	2
Above 1"	4

Note: defects points must not be more than 4 in each yard.

3.4 Fabric inspection system:

The length of the defect is used to determine the penalty point. Only major defects are considered. No penalty points are assigned to minor defects. (A major defect is any defect that would cause a final garment to be considered a second.)

Major Defects:

- Major woven fabric defects include but are not limited to slubs, holes, missing yarns, yarn variation, end out, soiled yarns, and wrong yarn.
- Major dye or printing defects are out of register, dye spots, machine stop, color out, color smear, or shading.

Acceptance Criteria and Calculation:

- 40 points per 100 yards is the acceptable defect rate
- # of Points per 100 yds. = # of penalty points x 100 Yds. inspected

Inspection Procedure:

- Determine the amount to inspect 10%).
- Select the rolls to inspect.
- Put the rolls on the inspection machine or other viewing device.
- Cut off a 6-inch piece across the width off the end of the roll. Mark the right and left side of the strip. Stop the inspection process every 50 yards and use the strip to check for any shading

problems. Also make sure to check the end of the role.
- Inspect for visual defects with the light on at a speed slow enough to find the defects. (The fitric must be checked at a slow rate in order to effectively find flaws). Sometimes you may have to turn the light off to see how a flaw will affect the appearance of a garment.
- Check that the roll contains the correct yardage as stated by the piece goods source.
- Check for skewed, biased, and bowed fabric.
- Mark any defects to the side with colored tape so that they can be easily found and noted.
- Record any defects.

For ex 100 square yds inspection

Defects length	No of faults	No of points
Up to— 3"	10	IOxl-10
3—6"	5	5x2=10
6—9"	2	2x3=6
Above 9"	0	0x4=0
Total		= 26

Points/100sq.yds

$$= \frac{Total'defecte'point}{Total'fabric'length(yds)} \times ---- \times \frac{100}{inspected'fabric'width}$$

$$= \frac{26}{120} \times \frac{100}{1} \times \frac{36}{48}$$

=16.25

we see that total numbers of points <40/IOO yds. for this reason 100 sq. yds is accepted.

CHAPTER 04

4.1 Spreading

Spreading is a process by which plies of fabric is spreader in order to get required length and width as per marker dimension. This is a preparatory operation for cutting and consist of laying. In other words, spreading is the process of stacking of layers of fabric to allow simultaneous cutting.

Factors considered for the ply height dimensions

A. Thickness of the fabric: When thickness of the fabric is more than numbers of plies should be less and numbers of plies may be higher in case of thin fabric.
B. Cutting Knife of height: Lay height should maximum be 70% of cutting knife height
C. Volume of production: If volume production requires, numbers of ply may be higher.
D. Nature of the fabric: ply height is determined by the nature of fiber by which fabric is made up. In case of same numbers of ply cotton may be cut manmade fiber may not be cut.

Requirements of fabric spreading

There are two types of requirements. These are

1) Basic requirement:
   a. Alignments of fabric plies
   b. Correct ply tension
   c. Fabric must be flat
2) Additional requirement
   a. Elimination of fabric faults
   b. Correct ply direction and adequate lay stability
   c. Elimination of static electricity
   d. Easy separation of cut lay in to bundle
   e. Avoidance of fusion of plies during cutting
   f. Avoidance of distortion in the spread
   g. Matching check or stripes

Methods of fabric spreading

1) Manual method
   a. Fabric is laid completed by hand
   b. With the help of mechanical assistance as hook

c. With the help of manually operated spreading track

2) Mechanical methods
   a. Semi-automatic
   b. Automatic

Automatic methods are as follows
- Automatic ply cutting device
- Automatic ply counting arrangements
- Automatic catcher
- Automatic fabric tension device
- Automatic fabric leveling device
- Fabric fault detector
- Turn able to turn fabric
- Maximum fabric width is 3 meter
- Maximum fabric weight is rolls 100 kg
- Maximum roll diameter is 50 cm
- Maximum spreading height is 25 cm etc.

4.2 Cutting Section

Fabric cutting:

Fabric cutting means to cut out the garment pieces from the lays of fabric with help of cutting template or marker. In other word, cutting is the process of separating garments parts from the fabric lay in pre size and shape.

The definition of fabric is very complex. In garments industries fabric is cut from lay and spreading accuracy and properly which is termed as fabric cutting.

Requirement of fabric cutting

- Precision of cut
- Clean edges
- Infused edges
- Support of the lay
- Consistent cutting

4.3 Flow chart of cutting section:

Production pattern
(To make production pattern for fabric cutting)
↓
Grading
(It is done according to difference size)
↓
Marker making
(To make marker according to various parts of production pattern)
↓
Fabric speading
(To spread the fabric for cut)
↓
Cutting
(To cut the fabric)
↓
Bunding
(To make the bundle according to various types of garment parts)

Cutting Consumption:

If we want to find out fabric consumption fist we select what types of fabric it is! If it is knitted fabric, then following formula should be used.

Consumption = {(fabric width * marker length / 1550 / 1000 (kg) * G.S.M) + wastage%}

Let, fabric width = 72 Inch

marker length = 8 yds. 4 inch

G.S.M = 180 so how much fabric is needed for I do/ t-shirt
.
Calculation = 8 yds. 4 inch = 8*36+4 = 292 inch

So. 72*292/1550/1000*180+5% = 2.5635 kg. is needed.

4.4 Method of fabric cutting:

There are three method of cutting are follows:

1. Manual
   - ❖ Hand operated scissor.

2. Manually operated power knife

   - ❖ Straight knife
   - ❖ Band knife
   - ❖ Round knife
   - ❖ Die knife
   - ❖ Notcher
   - ❖ Drill

3. Computerized

   - ❖ Knife
   - ❖ Laser
   - ❖ water knife
   - ❖ Plasma torch

Straight knife cutting machines are used in Bitopi group. Because it has some advantages from others which are follows.

- ❖ Comparatively cheap
- ❖ Can be transferred easily
- ❖ Easily operated
- ❖ Round corner can cut smooth easily
- ❖ Fabric can be cut from any angle
- ❖ Directly garments components separated from fabric lays

4.5 Properties of straight knife:

- ❖ Directly cut the pattern pieces from the fabric lays
- ❖ Could be used to cut for higher depth of fabric
- ❖ Cutting speed high
- ❖ Sharp and heavy corners can be cut
- ❖ Blade is very sharp Blade height 10-33 cm
- ❖ Blade stropped 2.5 cm-4.5 cm

4.6 Numbering

Sorting out the components according to size and for each size make individual bundle

Cutting no Bundle no	:1
Style no Quantity Color	:100 .-Blue
Parts name	: Pocket
Size: S M L	:8c
Serial no	:50-76 =26

4.7 Bundle card

The bundle card is most important in the garments section. In export qualify garments any type of shading and size mistake is not accepted, so it is used. Because buyer can not accept any types of shading and size mistake garments.

Bundle number: 08

Company name	: Bitopi Group
Top	: Sample
Color	: Blue
Style no	: Niclas jogger
Quantity	: 10 pies

CHAPTER 05

5.1 Flow chart of sewing section for working process:

Cutting Goods
(Cutting garment for sewing)
↓
M/C setup
(M/C setup for layout)
↓
Layout make

↓
Work in process

↓
Output

↓
Quality check
↓

Send Good Garments

5.2 Name of sewing m/c:

After cutting section fabric comes to the sewing section. In the sewing floor Which machines are used in bellow.

- Single needle m/c
- Double needle m/c
- 3,4,5,6 thread over lock m/c
- Chain stitch m/c
- Feed of the arm m/c
- Multi needle chain stitch m/c
- Flat lock m/c
- Bar tuck m/c
- Button hole m/c
- Eye hole m/c
- EC cutter m/c

5.3. Description of this machines are below:

5.3.1 Single needle m/c:

Properties:

- One needle
- Two tensioners
- Three guide
- One hook
- Two thread
- One bobbin case
- One magnate guide cations:

Applications:

- Bottom hemming
- Belt top seem stitch
- Belt joint stitch
- Loop tack stitch
- Pocket joint stitch
- Zipper joint
- Flap make
- Flap top stitch
- Flap joint
- Fly top stitch
- Flap 1/4 stitch
- Front rise stitch
- Back rise stitch

5.3.2 Over lock m/c

Properties:

- 5 thread
- 4 tensioner
- 2 knifes (up / down)
- 2 needle for 5 thread
- 1 needle for 3 thread
- 3 loppers for 5 thread
- 2 loppers for 3 thread

Applications:

- Join side seam
- Join inseam
- Back rise
- Front rise
- Back yoke
- Close front pocket bag

5.3.3. Bar tack m/c

Properties:

- 2 thread
- 2 tensioner
- 1 needle
- 1 bobbin

Applications:

- To created bar tack stitches in garments.
- Loop attach
- Fly make
- Pocket side
- Front side
- Back pocketing
- zipper lay
- In seem

5.3.4. Flat lock m/c

- 4 tensioner
- 3 thread
- Contain a holder
- 2 needle

Applications:

- Zigzag stitch
- Knit hemming
- Loop making 25.3.5. Kansai m/c:

5.3.5. Multi needle Chain stitch sewing machine

Properties:

- 2 needle
- 4 thread
- 2 lopper point (used two lopper depends on distance of stitches)
- 8 tensioner

Applications:

- Attach waist belt
- Top stitch at waist belt
- Belt make

5.3.6. Chain stitch m/c

Properties:

- 2 needle
- 2 lopper
- 4 thread
- 4 tensioners (back 2/front 2)

Applications:

- Join back rise
- Top stitch at back rise
- Top stitch at inseam
- Join back rise
- Top stitch at back rise

5.3.7. Vertical m/c

Properties:

- 2 thread
- I needle
- Contains magnate guide
- 1 tensioner
- Contains a knife

Applications:

- Pocket making
- Flap making
- Facing joint with pocketing
- Loop join at waist belt.

Double needle m/c

- 2 needle
- 2 tensioner
- 2 bobbin
- 2 thread
- 1 magnate guide

Applications:

- Front rise stitch
- Side top stitch
- Back pocket attach
- Front pocket mouth top stitch
- Flap make

5.3.8. Feed off the Arm m/c

Properties:

- 2 needle
- 2 lopper
- 4 thread (Lopper 2/needle 2)
- Contains T & Magnate guide

5.3.9. Button Holing m/c:

Properties:

- 2 thread
- 1 needle
- 2 tensioner
- Contains bobbin case, hook & knife

Applications:

- Make button hole

5.3.10. Button Attach m/c Properties:

- 2 thread
- 1 needle
- Contains shoulder, shoulder cap bobbin catching

Applications:

- To attach button.

5.3.11. Snap Button Attach m/c

Properties:

- Not use any types of thread & needle.
- It has button attach stage.
- Snap stage has two parts. Applications:

Applications:

- To attach snap button in gts
- To attach sub button in gt

CHAPTER 06

6.1 Quality control

The following defects should be identifying and must made in the quality control section.

Classification	Defect Code	Major Defects
FABRIC	101	Slubs/ Knot
FABRIC	102	Hole
FABRIC	103	Fabric run
FABRIC	104	Yarn Contamination
FABRIC	105	Snag/ Yarn Pull
FABRIC	106	Torque/ Skewness
FABRIC	107	Bleeding/ color migration
FABRIC	108	Dyeing/ finishing streak
FABRIC	109	Yellowing of white fabric
FABRIC	110	Thick/ thin yarn
FABRIC	111	Fold/ Crease Marks
CONSTRUCTION	201	Broken Stitch
CONSTRUCTION	202	Skip stitch
CONSTRUCTION	203	Raw edges/ frayed edges
CONSTRUCTION	204	Open seam
CONSTRUCTION	205	Overrun stitches/ Stitch joint not overlapping/ too long
CONSTRUCTION	206	Incorrect Margin/Allowance
CONSTRUCTION	207	Uneven/ Wavy stitches
CONSTRUCTION	208	Missing/ insecure seam
CONSTRUCTION	209	Twisted/ Roping
CONSTRUCTION	210	Puckered seam
CONSTRUCTION	211	Needle Chew/ damage
CONSTRUCTION	212	Conspicuous repair
CONSTRUCTION	213	Shading within garment
CONSTRUCTION	214	High-Low/Up-down
CONSTRUCTION	215	Style Mistake
CONSTRUCTION	216	Untrimmed thread/ Loose Thread/ Stay Stitch
CONSTRUCTION	217	Incorrect SPI
CONSTRUCTION	218	Any Part of garment caught in seams/ Unrelated parts
CONSTRUCTION	219	Insecure component/ trim/ label/ Elastic
CONSTRUCTION	220	Uneven shape
CONSTRUCTION	221	Down Stitch

Critical defects

CLEANLINESS	1003	Broken Needle/Sharp foreign Tools
CLEANLINESS	1004	Insect in Garment
CLEANLINESS	1005	Bad Odor

6.2 Traffic Light Card:

Objective

- Aims to achieve conformance to specification as far as sewing process is concerned.
    - Meet customer. Requirement.

- Attain customer required sewing workmanship & other sewing related matter.

- To ensure that rejection rate of each process are minimized and controlled.
- To provide an alarm signal should rejection rate is out of control.

Scope

This procedure covers inspect prime moment of new style Line Roaming QC will set six traffic light cards in all the machine.

- Cards are respectively1. Green for ok, 2.Yellow for Alarming,3. Orange for Machine disturb, 4.white for Trainee or new operator, 5.Red for Machine stop and 6.Chocolate for Critical operation.
- While checking the operation if process is ok then Roaming QC will set the Green card on that operation.
- But if found any problem then the Roaming QC will set the Yellow card as Alarming condition.
- It would be followed by roaming QC and check the machine two times, if problems not solved then he (R) will set the Red card on that machine as stop the machine.
- Very prime moment of any new style the Roaming QC will select minimum 10 machine as critical operations and hang the chocolate color traffic card on those machine and everybody would follow up whether any defect generate or not. If found any critical issues then everybody altogether (Roaming QC, LC, Mechanic, Technician and sample Technician will solve the issues.
- While continuing the production there is possibility to change any operator or due to absenteeism there is gather trainee operator. So for the follow up them a white traffic card is hung on that machine. If found any defect, then need the correct method and proper motivation for the operator.
- There are five 'M' in apparels industry. They are respectively Man, Machine, Material, Method and Motivation. So one of them M=Machine is very important. While conduct the continuous production there is possibility to disturb any machine or machineries part, so production/ Quality of product may be hampered. To avoid such type of problem we should check the calibration of machine before start the production. If machine totally not acceptable, on that case Roaming QC will hang the Red card as stop the machine. Until solve the problems it will be hung.

CHAPTER 07

7.1 Workmanship

Bitopi Group One ship base garment 8.00am - 5.00pm but run continues at the time up to 8.00am -7.00pm.

Total Operation time

Name of m/ces:	M/c	Number
1. Plain m/c		43
2. Over lock		13
3. Chain stitch		1
4. Flat lock		1
5. Kansai		1
6. Eye late holing		1
7. Snap button attaching		1
8. Bar tack		1
9. Two needle		3
10. Feed off the arm		3
11. Vertical		5
Total		63

Production rate per hour: 120

7.2 Assembly Line Balancing (ALB)

Assembly line balancing problems that occur in real world situations are dynamic and are fraught with various sources of uncertainties such as the performance of workers and the breakdown of machinery. This is especially true in the clothing industry

REMI HOLDINGS LTD

BITOPI GROUP

STYLE DESCRIPTION :	1 Back Welt Pocket, 2 Front Pocket, Join Back Rise Along Front Rise By OL. 2-Part Straight Waistbelt With 1 Segment

STYLE:	Roy Shorts	BUYER : H & M

DISCP	CPU	FRT	BACK	ASSM	TOTAL	100% TGT	1813	CATEGORY	REQUIRMENT
SAM (M)	3.5	2.65	2.35	8.75	17.25	PLANED TGT	1750	OPERATOR	58
SAM (H)	0.5	0.3	0.3	1.55	2.65	PLANED EFF %	97%	HELPER	9
SAM (I)	0.3	0	0	0	0.3	WORKN HR	600	IRON TABLEMAN	1
OPERATOR	12	9	8	29	58	PCS/MP	25.74	TOTAL	68
HELPER	2	1	1	5	9	TOTAL SAM	22.50		
IRON TABLEMAN	1	0	0	0	1	PRE. BY	KHALED-IE		
TOTAL M/P	15	10	9	34	68	PRE. DATE	3/Feb/17		
TOTAL W/S	14	10	10	33	67	REV. DATE	26/Feb/17	OB STATUS	

Sl. No	Zone	Section	Skill Grade	Operation Name	MC / Mac	Mac type	S.A.M	TGT / Hr	Operator Req	Alloted M/C	Plnd. W/S	Balan	Presser Foot	Folder	Attachment & Gauges	Remarks
1	Cpu	Pkt bag	B	Attach Facing At Front Pocket Bag 4 -Nos & Tack Waistaband Patch	M	SNLS	0.90	67	2.63	3.0	3.0		CR 1/16"	Tray		
2	Cpu	Pkt bag	D	Press Welt Pocket Facing With Reinforcement	I	IRON TABLE	0.30	200	0.88	1.0	1.0		CR 1/16"			
3	Cpu	Pkt bag	C	Attach Binding At Waistbelt With Cut	M	SNLS	0.35	171	1.02	1.0	1.0		CR 1/16"			
4	Cpu	Back	D	Mark On Body For Back Welt Pkt	H	PLAIN TABLE	0.20	300	0.58	1.0	1.0				Template	Balance For Dechain
5	Cpu	Back	A	Make Welt Pocket	M	APW	0.30	200	0.88	1.0	1.0		Reg-foot			
6	Cpu	W/belt	D	Mark On W/Belt	H	PLAIN TABLE	0.30	200	0.88	1.0	1.0				Template	
7	Cpu	Back	C	Make Eye Hole At Button Fly	M	EH	0.30	200	0.88	1.0	1.0		Reg-foot			
8	Cpu	Back	D	Serge D.Fly & Button Fly	M	OL 4T	0.35	171	1.02	1.0	1.0					
9	Cpu	Pkt bag	C	Bartack At Button Fly & Tack Care Label	M	BARTACK	0.35	171	1.02	1.0	1.0			Folder		
10	Cpu	Pkt bag	C	Close Front Pocket Bag With Turn (Bottom)	M	OL 3T	0.50	120	1.46	2.0	2.0					
11	Cpu	Pkt bag	C	Top Stich On Front Pocket Bag(Bottom)	M	SNLS	0.45	133	1.31	2.0	2.0		CR 1/4"			
12	Frt	Hanger	D	Set/Put Parts To Hanger-Front	H	PLAIN TABLE	0.30	200	0.88	1.0	1.0					
13	Frt	Front	C	Serge Front Rise & Button Fly with Single Fly	M	OL 4T	0.30	200	0.88	1.0	1.0					
14	Frt	Front	C	Shadow Stitch At Fly Area & Tack Button Fly	M	SNLS	0.35	171	1.02	1.0	1.0		CR 1/16"			
15	Frt	Front	B	Attach Front Pocket Bag To Body & Top Stitch At Front Pocket Mouth Op	M	SNLS	0.60	100	1.75	2.0	2.0			Tray		
16	Frt	Front	C	Tack Front Pocket Side & Waist	M	SNLS	0.50	120	1.46	2.0	2.0		Reg-foot			
17	Frt	Front	B	Attach D.Fly & Top Stich And Tack Front Rise	M	SNLS	0.60	100	1.75	2.0	2.0		CR 1/16"			
18	Frt	Front	C	Make J' Stitch On Front Fly	M	SNLS	0.30	200	0.88	1.0	1.0		Reg-foot			
19	Bk	Hanger	D	Set/Put Parts To Hanger-Back	H	PLAIN TABLE	0.30	200	0.88	1.0	1.0					
20	Bk	Back	B	Turn & Tack At Welt Pocket Corner & Top Stich At Welt Pocket Lower En	M	SNLS	0.60	100	1.75	2.0	2.0		CR 1/16"			
21	Bk	Back	B	Attach Back Pocket Facing & T/S	M	SNLS	0.40	150	1.17	1.5	2.0	B	CR 1/16"			
22	Bk	Back	C	Make Button hole At Back Welt Pocket	M	BH	0.15	400	0.44	0.5	1.0	B				
23	Bk	Back	C	Close Back Welt Pocket Bag With Turn	M	OL 3T	0.40	150	1.17	1.0	1.0	A				
24	Bk	Back	C	Top Stitch At Back Welt Pocket Bag & Tack At Waist	M	SNLS	0.45	133	1.31	2.0	2.0	A	CR 1/16"			
25	Bk	Back	B	Top Stitch At Welt Pocket Upper Entry	M	SNLS	0.35	171	1.02	1.0	1.0		CR 1/16"			
26	Asm-1	Assembly	D	Match Front Back & Loading Hanger	H	PLAIN TABLE	0.30	200	0.88	1.0	1.0					
27	Asm-1	Assembly	A	Join Inseam By OI Separetly	M	OL 5T	0.40	150	1.17	1.0	1.0	C				Bal from Join Side seam
28	Asm-1	Assembly	C	Safety Stich At Inseam Separetly	M	SNLS	0.35	171	1.02	1.0	1.0		Reg-foot			
29	Asm-1	Assembly	A	Join Back Rise Along Front Rise	M	OL 5T	0.50	120	1.46	2.0	2.0	C				Balance For Join Inseam
30	Asm-1	Assembly	B	Top Stitch At Back Rise Along Front Rise	M	SNCS	0.50	120	1.46	2.0	2.0					
31	Asm-1	Assembly	A	Join Side Seam	M	OL 5T	0.50	120	1.46	2.0	2.0					
32	Asm-1	Assembly	C	Safety Stich At Side Seam	M	SNLS	0.35	171	1.02	1.0	1.0		Reg-foot			
33	Asm-1	Assembly	D	Top Stitch At Side Seam Up To Hip	M	SNLS	0.40	150	1.17	2.0	2.0		CR 1/16"			
34	Asm-1	Assembly	D	Mark On Body For Loop Position	H	PLAIN TABLE	0.20	300	0.58	1.0	1.0				Template	
35	Asm-1	Assembly	C	Make Waistbelt Loop	M	3T FL	0.15	400	0.44	0.5	0.5			Folder		For 2 Line
36	Asm-1	Assembly	B	Attach Waistband Loop At Body 5-Nos And Attach Waistband Loop Suppo	M	SNEC	0.85	71	2.48	3.0	3.0		Reg-foot			
37	Asm-1	Assembly	A	Attach Waistbelt To Body	M	KANSAI	0.80	75	2.33	3.0	3.0		Reg-foot	Folder		
38	Asm-1	Label	C	Tack Care Label	M	SNLS	0.30	200	0.88	1.0	1.0	D	Reg-foot			Bal For Size Main Label Tack
39	Asm-1	Label	C	Tack Size & Brand Label and Tack at Waist	M	SNLS	0.50	120	1.46	1.0	1.0	D	Reg-foot			Bal from Tack Care Label
40	Asm-1	Assembly	D	Cut & Unpic Waistbelt Mouth L/R	H	PLAIN TABLE	0.75	80	2.19	2.0	1.0					
41	Asm-1	Assembly	A	Close Wiastbelt Mouth L/R	M	SNLS	0.80	75	2.33	3.0	3.0		Reg-foot			
42	Asm-1	Assembly	A	Turn Body	H	PLAIN TABLE	0.30	200	0.88	1.0	1.0					
43	Asm-1	Assembly	A	Bartack At Loops (10) With Fold	M	BARTACK	0.80	75	2.33	2.0	2.0					
44	Asm-1	Assembly	A	Bartack At Body (10) Nos	M	BARTACK	0.70	86	2.04	2.0	2.0					
45	Asm-1	Assembly	A	Hem Bottom	M	SNLS	0.70	86	2.04	2.0	2.0		CL 1/16"			
46	Asm-1	Assembly	C	Key Hole On W/Belt	M	EH	0.15	400	0.44	0.5	0.5					For 2 line
							22.50		58.92	68.0	68.0					

Require M/c	
Machine Type	Qty
DNCS	0
DNLS-SB	0
DNLS-FB	0
FOA	0
SNLS	32
SNEC	3
SNCS	2
OL 3T	3
OL 4T	2
OL 5T	5
BARTACK	5
BA	0
BH	1
EH	1.5
KANSAI	3
APW	1
3T FL	0.5
4T FL	0
SNAP	0
VELCO/LOOP CUTTER	0
POCKET PRESSING	0
THREAD TRIMMER	0
FLAP TURN	0
PROFILE	0
PLAIN TABLE	8
IRON TABLE	1
TOTAL	68

Require Grade operator	
Grade	Qty
A	19.00
B	16.50
C	20.50
D	12.00
Total	68.00

REMI HOLDINGS LTD

STYLE CHANGE OVER M/C LAYOUT

STYLE : STY-MADP43

100% TGT		1959	PLANED TGT	1650	PLANED EFF %	84%	WORKN HR	600	TTL M/P	75	Date :

SL. NO	S.A.M	CUM SAM	TGT	CUM TGT	OPE-GRADE	OPERATION DESCRIPTION	M/C TYPE	FINAL OUT PUT	SL. NO	S.A.M	CUM SAM	TGT	CUM TGT	OPE-GRADE	OPERATION DESCRIPTION	M/C TYPE
						TOP SIDE CHECK									INSIDE CHECK	
46	0.50		120.0		D	Crease Waistbelt Open Seam	Iron Table		43	0.60		100.0		B	Attach Waistband Loop At Body 5-Nos	2N5TOL
		0.50		120							0.60		100			
						Operator/HP Req	1.1								Operator/HP Req	1.3
43	0.60		100.0		B	Attach Waistband Loop At Body 5-Nos	2N5TOL		43	0.60		100.0		B	Attach Waistband Loop At Body 5-Nos	2N5TOL
		0.60		100							0.60		100			
						Operator/HP Req	1.3								Operator/HP Req	1.3
41	0.15		400.0		C	Make Waistbelt Loop	1N2TLS		42	0.22		272.7		C	Make Waistbelt Loop 3 Supp With Cut	2N3T-FL
		0.15		400							0.22		273			
						Operator/HP Req	0.3								Operator/HP Req	0.5
40	0.50		120.0		C	Safety Stich OnBack Rise Along Front Rise & Side Seam	1N2TLS		40	0.50		120.0		C	Safety Stich OnBack Rise Along Front Rise & Side Seam	1N2TLS
		0.50		120							0.50		120			
						Operator/HP Req	1.1								Operator/HP Req	1.1
45	0.40		150.0		B	Make Waistbelt	4N8TCSCWB		45	0.40		150.0		B	Make Waistbelt	4N8TCSCWB
		0.40		150							0.40		150			
						Operator/HP Req	0.9								Operator/HP Req	0.9
39	0.50		120.0		A	Join Side Seam	2N5TOL		44	0.30		200.0		C	Tack Loop Supporter At Waistband 3-Nos	1N2TLS
		0.50		120							0.30		200			
						Operator/HP Req	1.1								Operator/HP Req	0.7
39	0.50		120.0		A	Join Side Seam	2N5TOL		39	0.50		120.0		A	Join Side Seam	2N5TOL
		0.50		120							0.50		120			
						Operator/HP Req	1.1								Operator/HP Req	1.1
37	0.50		120.0		A	Join Back Rise Along Front Rise	2N5TOL		38	0.30		200.0		B	Mark J' Stitch On Front Fly	1N2TLS
		0.50		120							0.30		200			
						Operator/HP Req	1.1								Operator/HP Req	0.7
37	0.50		120.0		A	Join Back Rise Along Front Rise	2N5TOL		36	0.30		200.0		C	Safety Stich At Inseam Separetly	1N2TLS
		0.50		120							0.30		200			
						Operator/HP Req	1.1								Operator/HP Req	0.7
36	0.30		200.0		C	Safety Stich At Inseam Separetly	1N2TLS		36	0.30		200.0		C	Safety Stich At Inseam Separetly	1N2TLS
		0.30		200							0.30		200			
						Operator/HP Req	0.7								Operator/HP Req	0.7
35	0.30		200.0		A	Join Inseam By Ol Separetly	2N5TOL		35	0.30		200.0		A	Join Inseam By Ol Separetly	2N5TOL
		0.30		200							0.30		200			
						Operator/HP Req	0.7								Operator/HP Req	0.7
34	0.30		200.0		D	Match Front Back & Loading Hanger	Plain Table		34	0.30		200.0		D	Match Front Back & Loading Hanger	Plain Table
		0.30		200							0.30		200			
						Operator/HP Req	0.7								Operator/HP Req	0.7
33	0.30		200.0		C	Make Fake Keyhole At Back Pocket	1N3TBHE		33	0.30		200.0		C	Make Fake Keyhole At Back Pocket	1N3TBHE
		0.30		200							0.30		200			
						Operator/HP Req	0.7								Operator/HP Req	0.7
32	0.40		150.0		C	Tack At Back Waist & Blasting stich on pocket bag	1N2TLS		33	0.30		200.0		C	Make Fake Keyhole At Back Pocket	1N3TBHE
		0.40		150							0.30		200			
						Operator/HP Req	0.9								Operator/HP Req	0.7
32	0.40		150.0		C	Tack At Back Waist & Blasting stich on pocket bag	1N2TLS		32	0.40		150.0		C	Tack At Back Waist & Blasting stich on pocket bag	1N2TLS
		0.40		150							0.40		150			
						Operator/HP Req	0.9								Operator/HP Req	0.9
									31	0.40		150.0		B	T/s at welt pocket Upper Entry	1N2TLS
											0.40		150			
															Operator/HP Req	0.9
..																
						BACK PART CHECK									FRONT PART CHECK	
	#N/A		#N/A		#N/A	#N/A	#N/A		17	0.40		150.0		B	Attach Front Pocket Bag To Body	1N2TLS
		#N/A		#N/A							0.40		150			
						Operator/HP Req	#N/A								Operator/HP Req	0.9
30	1.20		50.0		B	Fold & T/S At Back Pocket Bag	1N2TLS		16	0.50		120.0		A	Att. Zip To D.Fly & R-Pannel Join & 1/16 T/S	1N2TLS
		1.20		50							0.50		120			
						Operator/HP Req	2.6								Operator/HP Req	1.1
30	1.20		50.0		B	Fold & T/S At Back Pocket Bag	1N2TLS		16	0.50		120.0		A	Att. Zip To D.Fly & R-Pannel Join & 1/16 T/S	1N2TLS
		1.20		50							0.50		120			
						Operator/HP Req	2.6								Operator/HP Req	1.1
29	0.40		150.0		C	Serge Back Pocket Bag	1N3TOL		15	0.30		200.0		C	Shadow Stich At S. Fly & Attach Zipper	2N4TLS
		0.40		150							0.30		200			
						Operator/HP Req	0.9								Operator/HP Req	0.7
29	0.40		150.0		C	Serge Back Pocket Bag	1N3TOL		15	0.30		200.0		C	Shadow Stich At S. Fly & Attach Zipper	2N4TLS
		0.40		150							0.30		200			
						Operator/HP Req	0.9								Operator/HP Req	0.7
29	0.40		150.0		C	Serge Back Pocket Bag	1N3TOL		14	0.30		200.0		C	Serge Single Fly & Front Rise W/S.Fly	2N4TOL
		0.40		150							0.30		200			
						Operator/HP Req	0.9								Operator/HP Req	0.7
28	0.68		88.2		B	Attach Back Pocket Facing & T/S	1N2TLS		14	0.30		200.0		C	Serge Single Fly & Front Rise W/S.Fly	2N4TOL
		0.68		88							0.30		200			
						Operator/HP Req	1.5								Operator/HP Req	0.7
27	0.60		100.0		B	Top Stich At Welt Pocket Lower Entry	1N2TLS		13	0.30		200.0		D	Set/Put Parts To Hanger-Front	Plain Table
		0.60		100							0.30		200			
						Operator/HP Req	1.3								Operator/HP Req	0.7
27	0.60		100.0		B	Top Stich At Welt Pocket Lower Entry	1N2TLS		13	0.30		200.0		D	Set/Put Parts To Hanger-Front	Plain Table
		0.60		100							0.30		200			
						Operator/HP Req	1.3								Operator/HP Req	0.7
26	0.60		100.0		B	Turn & Tack At Welt Pocket Corner	1N2TLS		12	0.50		120.0		C	Tack Elastic End With Waistbelt with Centre Tack	1N2TLS
		0.60		100							0.50		120			
						Operator/HP Req	1.3								Operator/HP Req	1.1
26	0.60		100.0		B	Turn & Tack At Welt Pocket Corner	1N2TLS		11	0.30		200.0		D	Insert Elastic	Plain Table
		0.60		100							0.30		200			
						Operator/HP Req	1.3								Operator/HP Req	0.7
23	0.35		171.4		D	Crease Facing	Iron Table		10	0.30		200.0		D	Mark,Measure & Cut Elastic	Plain Table
		0.35		171							0.30		200			
						Operator/HP Req	0.8								Operator/HP Req	0.7
23	0.35		171.4		D	Crease Facing	Iron Table		10	0.30		200.0		D	Mark,Measure & Cut Elastic	Plain Table
		0.35		171							0.30		200			
						Operator/HP Req	0.8								Operator/HP Req	0.7
22	0.35		171.4		C	Make Back Dart 2-Nos	1N2TLS		9	0.30		200.0		C	Attach Button On Waistbelt 2-Nos	1N2T-BH
		0.35		171							0.30		200			
						Operator/HP Req	0.8								Operator/HP Req	0.7
21	0.60		100.0		D	Mark On Body For Back Pkt & Loop Position	Plain Table		9	0.30		200.0		C	Attach Button On Waistbelt 2-Nos	1N2T-BH
		0.60		100							0.30		200			
						Operator/HP Req	1.3								Operator/HP Req	0.7
21	0.60		100.0		D	Mark On Body For Back Pkt & Loop Position	Plain Table		8	0.40		150.0		C	Make Box Stich At Waistbelt	1N2TLS
		0.60		100							0.40		150			
						Operator/HP Req	1.3								Operator/HP Req	0.9
25	1.00		60.0		D	Cut Welt Pocket With Corner	Plain Table		5	0.45		133.3		C	Attach Binding At Waistbelt	1N2TLS
		1.00		60							0.45		133			
						Operator/HP Req	2.17								Operator/HP Req	1.0
25	1.00		60.0		D	Cut Welt Pocket With Corner	Plain Table		4	0.30		200.0		C	Top Stich On Front Pocket Bag(Bottom)	1N2TLS
		1.00		60							0.30		200			
						Operator/HP Req	2.17								Operator/HP Req	0.7
24	0.60		100.0		B	Make Fake Welt Pocket With Turn	2N4TLS		3	0.34		176.5		B	Close Front Pocket Bag With Turn (Bottom)	1N3TOL
		0.60		100							0.34		176			
						Operator/HP Req	1.30								Operator/HP Req	0.7
18	0.35		171.4		B	Shadow Stich At Front Pocket Mouth Opening	1N2TLS		1	0.15		400.0		C	Serge D.Fly	2N4TOL
		0.35		171							0.15		400			
						Operator/HP Req	0.76								Operator/HP Req	0.3
						Back part			7	0.25		240.0		C	Make Button Hole 2-Nos	1N2T-BH
						Front part					0.25		240			
															Operator/HP Req	0.5
2	1.00		60.0		B	Attach Facing At Front Pocket Bag 4 -Nos	1N2TLS		6	0.55		109.1		D	Mark On W/Belt 7-Nos	Plain Table
		1.00		60							0.55		109			
						Operator/HP Req	2.2								Operator/HP Req	1.2

7.3 Machine wise sewing thread consumption (for1'stitch)

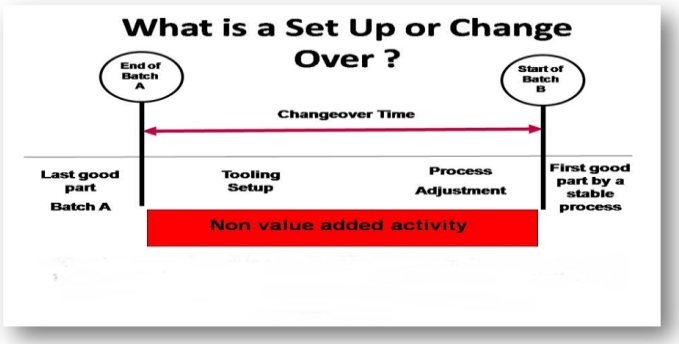
Machine wise sewing thread consumption per inch are gives in bellow:

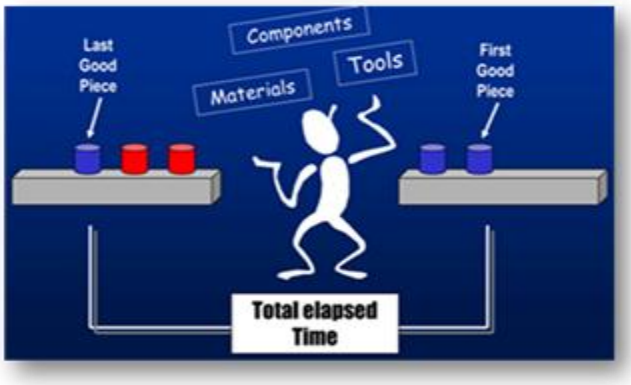
Machine	No. of needle	Thread consumption per inch
Plain	1	2.5"
Plain	2	5"
Over lock	3	16"
Over lock	4	18"
Over lock	5	21"
Flat lock	3	19"
Flat lock	5	32"
Bar tack	-------	7"— 8" normally per operation
Button hole stitching	-------	6"— 7" normally per hole
Button attaching 2 hole	-------	4" per button
Feed off the arm	-------	4 "per one needle
Kanshai Stitching	-------	4" per one needle
Back tape stitching	-------	7 "per one needle

CHAPTER 08

8.1 Quick Changeover

Quick changeover is the amount of time taken to change a piece of equipment from producing the last good piece of a production lot to the first good piece of the next production lot.





8.2 Benefits of changeover:

One of the main **benefits** is that it would increase the overall equipment effectiveness by reducing downtime and increasing the productive time. This is important for a plant. It would also increase the quality of work place processes.

Quick Changeover, also referred to as SMED, is a lean manufacturing technique designed to improve your efficiency in your manufacturing procedures.

Reduce your defect rates

Because you'll make less adjustments as part of your setup, you'll improve quality on the first piece.

8.3 Benefits of reduced changeover time:

By incorporating the above methods, massive dies are commonly changed in less than 10 minutes - setups that used to take hours. Benefits of reduced changeover time extend beyond the direct reduction of inventory to include:

- Reduced lead times and improved responsiveness to customers.
- Flexibility to respond to changes in demand.
- Improved product quality from quicker information feedback.
- Improved visual control and plant communication.
- Reduction of indirect costs for material movement, counting, and transaction processing.

8.4 Standard QCO check list:

Bitopi Group	Standard QCO Check List	Page no : 1
INITIAL ISSUE DATE	Quick Change Over	Edition : 1
25-04-2019		
LAST AMENEDE DATE	IE Department	Document
25-04-2019		

Prepared By	Authorized By	Approved By
Lean Team	IE Manager	GM

PSD:- Team No:- Style :- Customer:-

SL	What	Who	When	Cal Dates	Status 1/Date	Status-2/Date	Status -3/Date	Final status/Date
1	Plan Cut Date-Confirmation	Factory Planner	D-10					
2	FMEA ,OP break down & MC Lay out+ Special Attachment	IE ex	D-7					
3	M/C Availability & the Arrangement	IE ex	D-7					
4	Pilot/Size set Completion	Sample Room In cha	D-5					
5	Sealer Sample	Factory Planner	D-4					
6	Technical sample	Technician	D-4					
7	Supervisor Sample	Production Supervisor/Line	D-4					
8	Operator Allocation Sheet	IE	D-3					
9	PP Meeting & Brainstorming	Factory Planner	D-3					
10	Trim Card Readiness	Factory Planner	D-3					
11	Critical Machine Readiness	Mechanic In charge	D-3					
12	Training Cut From Actual fabric	Factory Planner	D-2					
13	Critical Operation training	Allocated Technician	D-2					
14	Bulk Cut Work Readiness	Cutting M	D-2					
15	QCO Review Meeting with Critical Operation Evaluate	Technician	D-2					
16	WIP Report/Close-Up Plan & Feeding Plan	IE Officer	D-1					
17	Buildup Plan & the incentive communication	IE Officer	D					
18	Style Change Over(PSD)	Respective Team	D					
19	Reflection Meeting (1St 5 Pcs Feedback/Improvements & Production Plan with Incentive)	Respective Team	D					
20	Feeding Analysis discussion	Respective Team	D					
	TTL Completed activities							
	%							

The Team	Special Notes:-
IE-Lead :-.....	.....
Technician :-.....	.....
Mechanic :-.....	.....
Quality C :-.....	
Line Chief :-.....	

8.5 Classification:

- Plan Cut Date-Confirmation
- FMEA, OP break down & MC Lay out+ Special Attachment requirement
- M/C Availability & the Arrangement
- Pilot/Size set Completion
- Sealer Sample
- Technical sample
- Supervisor Sample
- Operator Allocation Sheet
- PP Meeting & Brainstorming
- Trim Card Readiness
- Critical Machine Readiness
- Training Cut from Actual fabric
- Critical Operation training
- Bulk Cut Work Readiness
- QCO Review Meeting with Critical Operation Evaluate
- WIP Report/Close-Up Plan & Feeding Plan
- Buildup Plan & the incentive communication
- Style Change Over(PSD)
- Reflection Meeting (1St 5 Pcs Feedback/Improvements & Production Plan with Incentive)
- Feeding Analysis discussion

First of all we are taking a factory plan and count how many changeover we have for this month. Then we are make a plan for this way

Plan Cut Date-Confirmation:

It will check and confirm before 10 days earlier from changeover. If plan cut date change so the we are informing responsible person and confirm the date.

FMEA, OP break down, special Attachment:

_Failure Mode And Effective Analysis (FMEA) , op break down, special attachment this three content should done before 7 days ago from changeover. This meeting doing technician head.

M/C availability & the Arrangement:

It will check by IE ex for this changeover M/C available or not. It will check before 7 days ago from changeover.

Sealer Sample:

Every time we are facing this problem, layout start but layout responsible person doesn't know approve sample into the factory or not. That's way it should check with GPQ person which style we working this style sample available in factory or not it should check before 5 days ago from the changeover.

Initial completion:

Initial complete before 5 days ago from changeover.

Technical Sample:

Technician must make technical sample before 4 days ago from changeover. Each technician should be make two sample.

Supervisor Sample:

Every line chief and supervisor must make 1 pcs sample. When he or she make it that time he or she facing some critical process. That time line chief & supervisor easily identify which process are critical and which process are similar to pervious style.

Operator Allocation Sheet:

Responsible IE person must make day no 3 set with line chief. It should be follow changeover time.

PP Meeting and Trim Card Readiness:

This two category must check 3 days before form the changeover

- Lead by RQS Manager
- Participation – RQS, Line In-charge, Quality responsible, particular technician, Merchandiser, IE responsible, Mechanical responsible, finishing responsible, supply chain responsible, Sample Responsible, Store Responsible.

Critical Machine Readiness:

Before 3 days ago check with Maintenance Manager Critical M/C available or not form the changeover. If all M/C are available so the OCO mechanic ready all critical M/C before changeover.

Training cut from actual fabric and Critical operation training:

Critical operation training it should be start at day number two before the changeover.

QCO Review Meeting with Critical Operation Evaluate:

It should be done day no 2 with line responsible person for critical operation.

WIP Report/Close-Up Plan & Feeding Plan:

Check with line chief, APM, & IE Sr. Executive how many actual WIP have in line and when new style layout start. Also make team there are working for changeover, it must complete before one days ago from changeover.

Reflection Meeting (1St 5 pcs Feedback/Improvements & Production Plan with Incentive):

After complete the layout all responsible person for this line take five pcs garments and check it.

CHAPTER 09

9.1 Finishing Section

The process by which unwanted crease and crinkle are removed with the view of increasing smoothness, brightness and beauty of the garments is called pressing. In the garments industries it is called ironing. This process plays an important role to grow attractiveness to the buyers.

Materials used in garment Finishing

- Iron
- Neck board
- Back board
- Full board
- Hand tag
- Tag pin
- Tissue paper
- Al pin
- Ball pin
- Elastic clip
- Hanger
- Poly bag
- Size sticker
- Jucker
- Gun tap
- Inner box
- Muster cartoon box
- Pp belt
- Blister

9.2 The following are the matters must be inspected during pressing.

- Inspected for fused area or fused stain if any.
- Inspected for water spot if any.
- Inspected for shade variation area if any.
- Inspected for broken chain or button if any.
- Inspected for correct folding of garments.
- Inspected for crinkle area and rough surface if any.
- Inspected for stretched garments area during pressing if any.
- Inspected for proper drying of garments after pressing.
- Inspected for crinkle area and rough surface of pocket if any.
- Inspected for unexpected crease in lining.
- Inspected for proper shape.

This is also informed that, the temperature, pressure of pressing head and time during pressing must be inspected.

9.3 Flow chart of working processes in Finishing Section of Dowel grope, is gives in bellow:

Inside quality control
(To checked inside of a garments)
↓
Get up quality control
(To checked all processes of garments making)
↓
Ironing
(To iron the garments)
↓
Measurement checking
(To measure all parts of the garments for accuracy)
↓
Waist
(To attach Waist)
↓
Button attach
(To attach button)
↓

Re-ironing
(To iron again)
↓
Again checking
(To check again)
↓
Hand tagging
(To attach hand tag)
↓
Folding / hungering
(To folding/hungering according to buyer requirement)
↓
Shading
(To separate various shade of garments)
↓
Packing
(To pack in the poly bag)
↓
Cartooning
(To keep on carton on buyer requirements)

CHAPTER 10

10.1 Inspections/Audits

Purpose

This SOP establishes lot or batch sampling plans and procedures for inspection/ Audit by attributes.

Definitions

AQL (Accepted Quality Level) – is the Quality Level which, for the purpose of sampling inspection, is the limit of a satisfactory process average.

LOT

Number of Semi processed parts/ Panels/ Garments ready for Audit.

SAMPLE SIZE

The number of garments/ parts/ panels to be taken for inspection from the lot. Example, If Lot Size = 500 garments, select 32 pcs to inspect.

ACCEPTANCE NUMBER

- The number of faulty garments that a sample may have without the entire lot being rejected. (e.g. - AQL 1.5, Lot Size 500 pcs, one defective garment out of 32 is allowed.)

Defect Classification Guidelines

Defects - is any nonconformance of the product against specified requirements, Defects classified into Critical, Major & Minor.

Critical Defects - A Critical Defect is defined as anything that can potentially be considered harmful to the product user or not abide laws of country of sales (incorrect Country of origin, incorrect fiber content, etc.) or render the product UNSALEBLE and thereby lead to the cancellation of the order. For Example – Broken needle, Wrong Style, Incorrect Country of Origin/Fiber etc.

Major Defects- A fault that is likely to prevent the product from being fit for purpose and/ or may affect the product's durability. A fault of this type would generate a customer return. (Example – Skip stitches, Broken Stitches, Open Seam, Wrong Size etc.)

Minor Defect - A fault that may result in a customer complaint or a customer rejecting a product in favor of one with a better standard. (Example – Uncut Thread)

10.2 Inspection/ Audit Details done at Remi Holdings Limited

Fabric Inspection– 4 Point System (Acceptance Criteria – 18 Points per 100 Sq Yards)

Trims Inspection – AQL 1.5 (Normal Plan- Level 1)

Bundling Audit – AQL 1.5 (Normal Plan- Level 1)

Roaming QC – 7/0 (AQL 1.5)

Sewing – 100% Inline Inspection & 100% End line Inspection

Sewing Audit – AQL 1.5 (Normal Plan- Level 1)

Washing – AQL 1.5 (Normal Plan- Level 1)

Finishing – 100% Before Pressing, 100% Presentation Check & 100% Measurement Check on critical Points.

Finishing Audit - AQL 1.5 (Normal Plan- Level 1)

Pre-Final/ Final Audit

- Critical Defects – Zero Tolerance
- Major Visual Defects - AQL 2.5 or as equal to buyer requirement
- Minor Defects – AQL 4.0 or as equal to buyer requirement
- Measurement Audit – AQL 4.0
- Carton Accuracy – Zero Tolerance

Document Reference

AQL Chart & Defects Classified Log

Remi Holdings Limited – Standard Sampling Plan						
LOT SIZE OR QUANTITY TO BE AUDITED	ACCEPTABLE QUALITY LEVEL (NORMAL PLAN)					
	1.5		2.5		4.0	
	INSPECTION	ACCEPTABLE	INSPECTION	ACCEPTABLE	INSPECTION	ACCEPTABLE
LESS THAN 151	8	0	5	0	13	1
151 - 280	8	0	20	1	13	1
281 - 500	32	1	20	1	20	2
501 - 1200	32	1	32	2	32	3
1201 - 3200	50	2	50	3	50	5
3201 - 10000	80	3	80	5	80	7

10001 - 35000	**125**	**5**	**125**	**7**	**125**	**10**

Table for Carton Accuracy

CARTONS PACKED	CARTONS TO BE SAMPLE	ACCEPT / REJECT
5---15	**3**	**0 - 1**
16 --- 50	**8**	**0 - 1**
51 --- 150	**20**	**0 - 1**
151 --- 500	**50**	**0 - 1**
501 --- 1200	**80**	**0 - 1**

CHAPTER 11

Conclusion

Now-a-days Textile field becomes very competitive & the buyer wants 100% quality) duct. For this reason, it is very important to know about the latest technologies in (tile sector. To produce a quality product, as a textile engineer 1 must have a vast owl edge about the production parameters & how to produce a high quality product. To commodity the theoretical study with technical and practical things industrial training internee) is very important. In my training period I have observed that Crystal Impolite Ltd. produce high quality fabric and fulfill the special requirements from the afferent types of buyers by following different internationally recommended standard ethos. In my training period 1 have learned many things such as different types of machines and their functions, techniques of productions and the management system. In is training period 1 have also learned how the desired product is made ready for limpet from the starting to the end i.e. from merchandising to the packaging. In this lining period I have got an idea about the responsibility of different departments of the factory. So I think this industrial training will help me in future.

Appendices

Learn about manufacturing systems and ways to analyze them in terms of material flow and storage, information flow, capacities, and times and durations of events, especially random events.

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